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## SOME INDIAN GREEN AND BROWN ALGAE ESPECIALLY FROM THE SHORES OF THE PRESIDENCY OF BOMBAY—III.[1]

BY

F. Boergesen.

### Fam. Valoniaceæ.[2]

**Valonia utricularis** (Roth.) Ag.

*Agardh, C.*, Spec. Alg., vol. I, 1821, p. 431. *Kuckuck, P.*, Über den Bau und die Fortpflanzung von Halicystis Aresch. und Valonia Ginn., Bot. Zeit. 1907. *Boergesen, F.*, Mar. Algæ D. W. I, vol. I, p. 30, fig. 17–18.

The specimens form low tufts on the rocks. The vesicles are often rather much ramified and intermingled forming low cushions. The form found seems to come near forma CRUSTACEA Kuck.

*India :* Okha Port.

*Geogr. Distrib.* In most warm seas.

### Fam. Boodleaceæ.

**Cladophoropsis Zollingeri** (Kütz.) Boergs.

*Boergesen, F.*, Contributions à la connaissance du genre Siphonocladus Schmitz. (Oversigt kgl. danske Videnskab. Selskabs Forhandlinger, 1905, no. 3, p. 288).

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[1] Continued from the Journal of the Indian Botanical Society, Vol. IX, p. 151 and Vol. XI p. 51. A corresponding series of papers on the Indian Rhodophyceæ is published in the Kew Bulletin, part I in 1931, No. 1, and part II in 1932, No. 3.

[2] Regarding the arrangement of the families and genera in the group *Siphonocladiales* compare my remarks in "Marine Algæ from the Canary Islands", I, Chlorophyceae, in Kgl. Danske Videnskabernes Selskab. Biologiske Meddelelser, Vol. V, 3. København 1925.

CLADOPHORA AEGAGROPILA Zollingori Kütz., Spec. Alg. p. 415; Tab. Phycolog., vol. IV, tab. 64, fig. II.

SIPHONOCLADUS ZOLLINGERI (Kütz.) Bornet in Mission scientif. du Cap Horn., t. v., Botanique, p. 22. *De Toni*, Sylloge Alg., vol. I, p. 359.

The plant forms dense rather dark-green tufts. The filaments of which the thallus consists are very irregularly ramified (Fig. 1), the

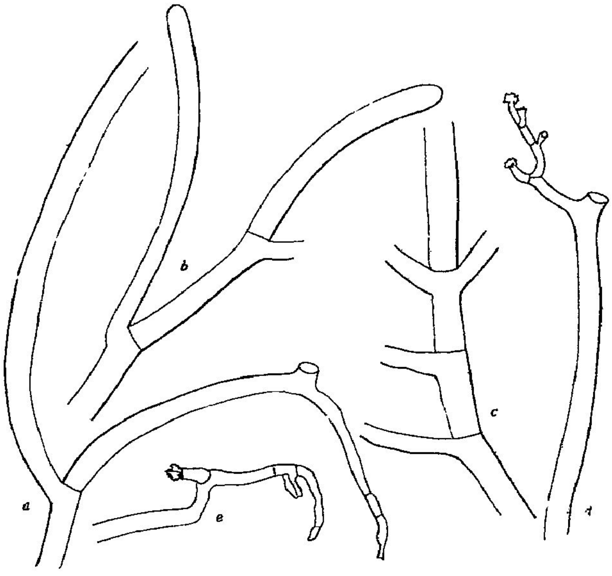


Fig. 1. **Cladophoropsis Zollingeri** (Kutz.) Boergs a, b, c, showing different kind of ramification; a, d, e, filaments with rhizoids and tenacula. × 22.

branches issuing at shorter or longer intervals, sometimes scattered occasionally more or less uniseriate and rarely subopposite as well. Cross-walls occur very irregularly, the cells forming sometimes very long utricles, sometimes short ones only a few times longer than the breadth of the filaments. The breadth of the filaments is rather variable; most of the filaments are about 150 $\mu$ thick, but filaments less than 100 $\mu$ or more than 200 $\mu$ are often found. The apex of the filaments is obtuse, and near it the filaments are often a little thicker.

At the base the filaments are provided with rhizoids and short tenacula (Fig. 1, d, e) by means of which they are fastened to the substratum and neighbouring filaments.

When I refer this plant to CLADOPHOROPSIS ZOLLINGERI it is because its dimensions seem to agree very well with those of this species, and because on the whole my plant agrees quite well with it; but I wish to point out that I have not seen any original specimen of this species.

The plant forms dense tufts on the rock in the lower littoral zone in somewhat sheltered places.

*India*: Bombay in the Arabian Sea.

*Geogr. Distrib.* Malayan Archipelago.

## Fam. Siphonocladiaceæ.

### Struvea delicatula Kütz.

*Kützing*, Tabulæ Phycologicæ, vol. 16, tab. 2.

In earlier papers (cf. Mar. Alg. D.W.I. vol. I, p. 54, fig. 39) I considered *Harvey's* CLADOPHORA? ANASTOMOSANS and *Kützing's* plant as the same species. Meanwhile by the kind permission of Mr. *J. Ramsbottom*, Keeper of Botany, British Museum, I was able to see a slide of *Harvey's* STRUVEA ANASTOMOSANS, and on comparing it with specimens of STRUVEA DELICATULA, I have come to the conclusion that these are different species. *Harvey's* figure in "Phycologia Australica", Pl. 101, gives a really good representation of the Australian plant. As the most marked differences between *Harvey's* plant and *Kützing's* I shall point out its larger size and its bigger leaf-like part, which is more openly ramified on account of the more distantly placed branchlets. To this must be added the much longer cells in the main stem and branches; and finally *Harvey's* plant has quite thin walls.

From India I have seen a few specimens of STRUVEA DELICATULA which were given to me by Mr. *S. C. Dixit* and a few others which I gathered myself at Bandra seaface near Bombay. I have compared these specimens with plants from the West Indies and found that they quite agree with my figures and description (l.c.) of it.

*India*: Bombay, Colaba (legit et dedit Mr. *S. C. Dixit*); Bandra seaface.

*Geogr. Distrib.* Found in most warm seas.

### Struvea tuticorinensis Boergs. sp. nov.

STRUVEA cæspites, formans ca $3\frac{1}{2}$ cm alta, e stipitibus cylindricis simplicibus, ad basem transverse annulatis, superne levibus et flabellis

ovalibus, reticulatis composita. Flabellum ca 1½ cm, longum et 1 cm latum in ætate juniori ovalem in adultiori magis irregulariter formatum, costatum, costa e cellulis 500–800 μ longis et 250 μ latis composita. Rami flabelli oppositi, pluries pinnatis, apicibus ramulorum concrescentibus. Plate I et Fig. 2.

The basal part of the plant consists of very much ramified rhizoids by means of which the plant is fixed to the substratum, shells, stones, etc. From this base the erect stems arise. When young they are almost cylindrical bodies a little slender at their base getting gradually thicker upwards and tapering again near the summit into the upper obtuse end. For instance such a young stem at its base is about 330 μ thick and at its thickest about 1,000 μ; its length is 1½ cm. and it is composed of a single cell only. When it reaches the stage of development when the leaflike part of the thallus is going to be formed, some annular corrugations (5–6) become visible at the base of the stem (Fig. 2), and at the same time a row of cells is formed at its upper end. The material in spirits was, I am sorry to say, very bad. It contained only some very young undivided stems and bits of old half-decayed thalli; but to judge from the dried material the development of the leaflike part of the thallus takes place in quite the same way as in STRUVEA ELEGANS as described by me [1]. From the upper end of the cells formed at the apex of the stem two opposite branches grow out at both sides from each of the cells, all the branches lying in the same plane. When these branches have reached some length, they are divided into a number of cells by segregative cell-division and from the upper end of these cells two new opposite branches grow out again (Fig. 2). This process may be repeated a few times more, the last ramifications being issued often more irregularly. The upper ends of the short branchlets become firmly fixed to the neighbouring filaments.

The basal cell of the leaf-like part of the thallus is the longest, about 2 mm., whereas the other cells in the main axis in the leaf reach only a length of about 500–600μ, and their breadth is about 250μ. The height of the plant is a little more than 3 cm; the length of the leaf-like part about 1½ cm and the breadth a little more than 1 cm.

As mentioned above the plant is very much like the West Indian STRUVEA ELEGANS, but on the whole it is much smaller, almost half as small. On account of this and its geographical distribution, I think it most appropriate to consider it a new species.

The plant was dredged at a depth of about 40 feet.

*South India:* Tuticorin. BOERGESEN no. 5673 (type).

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[1] *Boergesen, F.*, Marine Algæ of the Danish West Indies, vol. I, p. 51 figs. 37–38, Copenhagen 1913

**Chamaedoris auriculata** Boergs. sp. nov.

Thallus ca 6 cm. altus, e stipite tubuloso, transverse annulato, in superiori parte 1–2 cellulas continente, et capitulo excentrico,

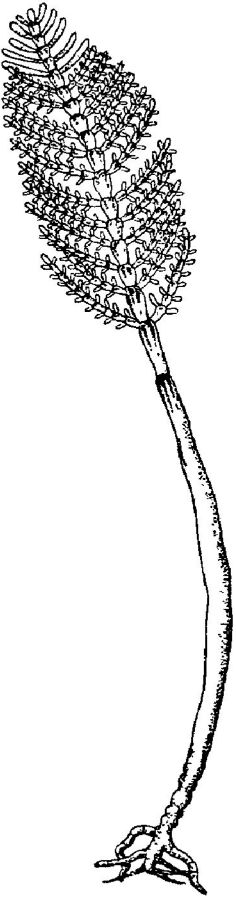

Fig. 2. **Struvea tuticorinensis** Boergs sp. nov × 5.

auriculato, ad 1½ cm longo compositus. Capitulum e filamentis, in 2–3 verticillas ordinatis, subdichotome ramosis, ca 125 μ latis, inter se tenaculis adfixis compositum est.

This fine plant (Fig. 3) forms more or less dense tufts upon the rocks to which it is fixed by means of ramified rhizoids. The tufts have as a rule a height of about 6 cm; but some of the specimens may

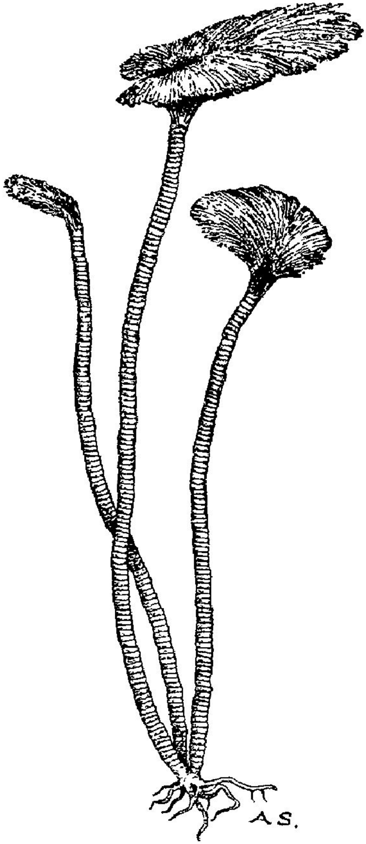


Fig. 3. **Chamædoris auriculata** Boergs. sp. now. Habit of the plant × 2½.

reach a length of up to 8–9 cm. The stipe is annularly constricted from the base to the beginning of the capitulum. Generally the stipe is unbranched, but occasionally it is branched, the branching appearing to be due as a rule to some damage.

The development of the thallus is very similar to that of CHAMÆDORIS PENICULUM as described by me in "Mar. Alg. D.W.I.", vol. I, p. 56, figs. 40–43, but owing to the scantiness of the material available I have not been able to follow it in all its details. The stipe is at first a cylindrical tube which gradually becomes annularly constricted from the base upwards. When it has reached its normal size, its upper end swells somewhat and one to two cells are formed. When two cells are formed, the lower cell is larger than the upper (Fig. 4a). Then the formation of the capitulum begins. From the upper end of the swollen part of the stem a whorl of filaments is

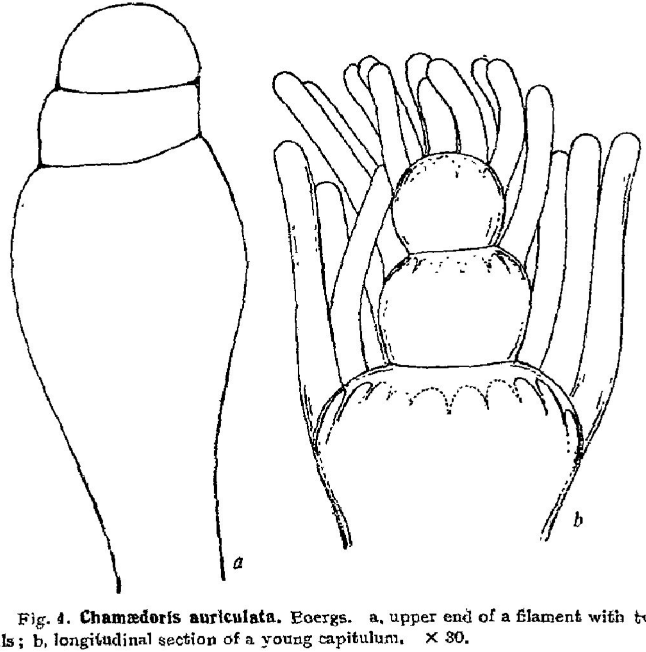


Fig. 4. **Chamædoris auriculata.** Boergs. a, upper end of a filament with two cells; b, longitudinal section of a young capitulum. × 30.

given out surrounding the base of the smaller cell above, and in a similar way whorls of filaments are given off from the upper end of this cell and from the one above, if two are present (Fig. 4b). At the same time the upper end of the stipe becomes somewhat compressed. The lowermost whorl consists of about 20 filaments, while the two above have decreasing numbers of filaments. The filaments grow out

eccentrically to one side forming the flat, auriculate capitulum (Fig. 3). The filaments are repeatedly subdichotomously ramified (Fig. 5a) and kept together by means of tenacula (Fig. 5b). The diameter of the filaments is about 125 $\mu$.

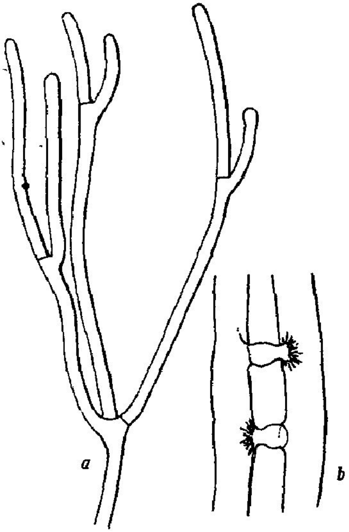


Fig. 5. **Chamædoris auriculata** Boergs. a, upper ends of the filaments composing the capitulum. b, parts of filaments attached to each other by tenacula, a, × 30; b, × 65.

It is very interesting that this genus hitherto considered to be monotypic now comprises 3 species, namely, the long known West Indian species, CHAMÆDORIS PENICULUM (Sol.) Kuntze, one Japanese species, CHAMÆDORIS ORIENTALIS Okamura[1], and the Indian one described here. The Indian plant is closely related to CHAMÆDORIS PENICULUM, but is much smaller, and its capitulum does not reach the height of the West Indian Plant and is easily distinguished from the former species by its thin, oblique, eccentric, rather flat, auriculate capitulum[2] in which only one or two central cells are formed at the top of the stipe.

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[1] *Okamura, K.*, On the marine Algae from Kôtôsho (Botel Tobago). Reprinted from the Bulletin of the Biogeographical Society of Japan, 1931, vol. 2, p. 98, pl. 10.

[2] The shape of the thallus reminds one very much that of the fungus, HYDNUM AURISCALPIUM L.

The plant was found in the littoral zone in a very exposed locality and formed together with other small algæ dense tufts upon the rocks.

*India* : Dwarka, *Boergesen* No. 5447 (type).

## Fam. Fucaceae.

### Cystophyllum muricatum (Turn.) J. Ag.

*Agardh, J.*, Spec. Alg., vol. I, p. 231. *Harvey*, Phycologia Austral. vol. III, pl 139.

FUCUS MURICATUS Turner, Fuci, p. 107, tab. 112.

CYSTOSEIRA MURICATA Ag., Icones ineditæ, Nova edit., Lund 1846, tab. XII.

CYSTOSEIRA TRINODIS Ag., Icones ineditæ, Holmiæ 1821, tab. XII.

SIROPHYSALIS MURICATA Kütz., Phycol. gener., p. 368; Spec. Alg., p. 602; Tab. phycol., vol. X, tab. 55.

The specimens which I refer to this plant seem to agree quite well with *J. Agardh's* description and with the quoted figures. The plant reaches a height of about 50 cm or perhaps more. It has a rough stem, the roughness being due to numerous short processes which, as strikingly described by *Turner*, remind one of " rudiments of leaves or branches, which give the plant a singularly muricated appearance." The basal leaves, present only in a few specimens, are linear with entire margin, about 4–5 cm long and 3 mm broad with more or less rounded apices and a row of cryptostomes on both sides of the midrib. The vesicles are nearly all of the same size, oval with cryptostomes scattered over their surface either solitarily or 2 or more together, but always separated by short, stem-like intervals, the uppermost being ciliate. The receptacles are subcylindric and ramified.

*India* : Tuticorin, Hare Island, in shallow water.

*Geogr. Distrib.* Admirality Isles, New Holland, Malayan Archipelago.

### Sargassum Ag.

As I knew that Professor *W. A. Setchell*, Berkeley, California, was interested in the study of SARGASSUM from the East, I requested him to kindly determine for me my small collection of Indian SARGASSUM. He most kindly agreed to do so, and I have now received a list of his determinations. When he sent these back to me, he pointed out in his letter that his determinations must be regarded as only tentative until they are compared with the type specimens. As he was not

able to see the type specimens of these Indian species himself he asked me to compare my plants with the type specimens found in *J. Agardh's* Herbarium in Lund, Sweden.

In the list given below only 6 species are mentioned, of which four were gathered by myself and of which materials were sent to Professor *Setchell,* and two were found in a collection of Algæ belonging to the British Museum sent to me for determination. But many more species are known previously from India. In *J. Agardh's* Species Algarum, vol. I, Algas Fucoideas complectens, Lund, 1848, several species of Indian Sargassum are described; and in *R. K. Greville's* paper; "Algæ Orientales:—Descriptions of new species belonging to the genus Sargassum", in Annals and Magazines of Natural History, Ser. 2., vol. 3, p. 85, 14 species are mentioned as found in India.

*Agardh's* and *Greville's* works appeared almost at the same time, and, as Professor *Setchell* pointed out in his letter to me, here again is a question as to whether *Greville's* paper or *J. Agardh's* book was published first. "That would be a matter of the day and month of the year 1848, which may be difficult to settle", writes Professor *Setchell.* Fortunately we seem to be able to solve this question satisfactorily by means of the reviews of the two works. *J. Agardh's* work is reviewed in the Botanische Zeitung, 1848, p. 754, in the number published on October 27th, and must therefore have appeared before that date. On the other hand the first part of *Greville's* paper containing three species and Plate IV (the first of the 7 plates belonging to the paper) did not appear until 1849 according to "*Vickström's* Aarsberettelser" for 1849, p. 178. Accordingly *J. Agardh's* names have the priority ([1]).

Besides the two above mentioned papers dealing with SARGASSUM, I wish to mention also, as important works on this genus, *J. Agardh's,* "Species Sargassorum Australiæ descriptæ et dispositæ" (Kongl. Svenska Vetenskaps—Akad. Handl., Bd. 23, Stockholm 1889) and *A. Grunow's* most valuable posthumous work: "Additamenta ad cognitionem Sargassorum" in Verhandlungen d. k. k. zoologisch-botanischen Gesellschaft in Wien, 1916.

## **Sargassum tenerrimum** J. Ag.

*Agardh, J.,* Spec. Alg., vol. I, p. 305; Spec. Sargass. Austral., p. 83, Kützing, Spec. Alg., p. 626.

SARGASSUM CAMPBELLIANUM Greville, Sargassum, p. 88, Pl. V. *Grunow,* Additamenta, p. 370, no. 70.

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[1] *J. Agardh's* work on the Phæophyceæ is already reviewed in the foregoing volume of *Vickström's* Aarsberettelser for the years 1845-48.

To this species (Fig. 6 and Plate II) I had referred already before I sent my collection to Professor *Setchell* several specimens gathered at Bombay from where, too, the type specimens in Herb *J. Agardh*, Lund, originate. I have been able to compare my specimens with *Agardh's* and I have stated their congruity. SARGASSUM CAMPBELLIANUM Grev. is surely closely related to and most probably identical with

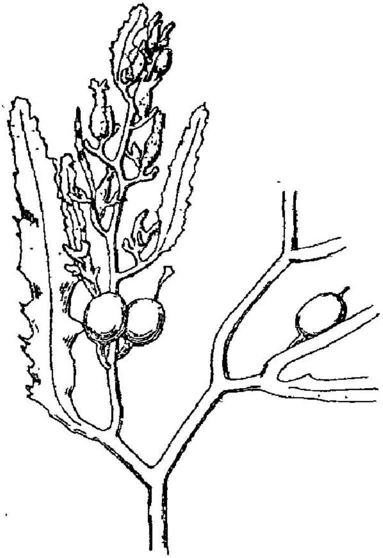

Fig. 6. **Sargassum tenerrimum** g. Ag. Part of the thallus with leaves, vesicles and receptacles. × 3.

S. TENERRIMUM J. Ag.[1]. In "Spec. Sargassorum" *Agardh* refers to S. CAMPBELLIANUM as a synonym of his species, and Prof. *Setchell* writes to me that the minor differences may be simply differences in stages of development. In *J. Agardh's* Herbarium I have not seen any specimens of *Greville's* plant, but several of my specimens seem to resemble his figures.

As the name indicates S. TENERRIMUM is a delicate, thin leaved, fine species which contrary to most species of this genus adheres to the paper when dried. The dried plant has a brownish olive-green colour.

[1] *Grunow*, l.c., refers to *Greville's* species as a var. CAMPBELLIANA (Grev.) of S. TENERRIMUM J. Ag.

The stem is glabrous and rarely more than ½ mm thick when dried. The leaves reach in the lower parts of the plant up to a length of 6 cm and a breadth of 1½ cm, but become gradually much smaller upwards. They are linear or linear-lanceolate in shape with a narrow rounded apex and an elongated cuneate base running evenly over

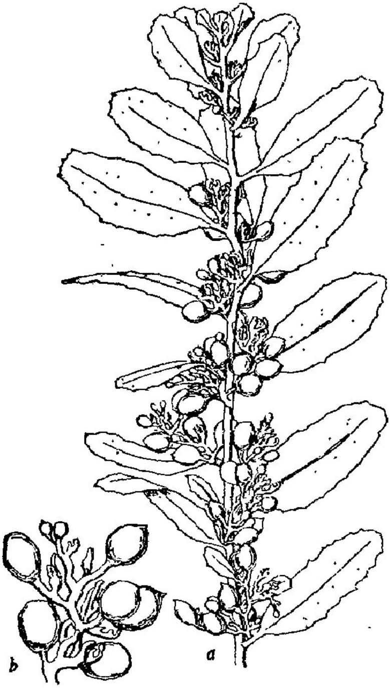


Fig. 7. **Sargassum cinereum** J. Ag. var. **berberifolia** Grun, a, part of the thallus with leaves, vesicles and receptacles; b, small part of the same more magnified a, × 1½ ; b, × 3.

into the short stipe. Their margin is sinuate-dentate. The leaf is thin, translucent, with a thin midrib and on both sides scattered small cryptostomes. The vesicles are nearly spherical, about 3–5 mm long and about just as broad, their stipe being about half as long. The receptacles are androgynous, ramified and spinose.

*India :* Bombay, in many localities in the open sea ; Dwarka.

*Geogr. Distrib.* Arabian Sea along the Indian Coast.

## **Sargassum cinereum** J. Ag. var. **berberifolia** Grun.

*Grunow, A.*, Additamenta, p. 378, no. 76.

The determination of this plant (Fig. 7 and Plate III) I owe to Professor *Setchell*. As no specimens of this variety are to be found in Herb. *J. Agardh*, in Lund, I have only been able to compare my plant with specimens of forma *typica* of which several specimens from Hongkong are found in *J. Agardh's* Herbarium. Those have smaller leaves than mine, whereas the vesicles have nearly the same size. Professor *Setchell* writes to me that he has tentatively referred this plant to SARGASSUM CARPOPHYLLUM, but he adds that the leaves are too broad for that species, at least according to the description. Therefore I looked up this species in Herb. *J. Agardh*, Lund, and found that it had much smaller leaves and was on the whole rather different from my plant.

The specimens in my collection are of a greyish-brown colour. The stipe is glabrous. The leaves are about 2½ cm long and ¾ cm broad in the fruiting part; in a young plant the leaves are about 3½ cm long and 8 mm broad. The leaves have an obtuse apex and a cuneate base passing over into a short stipe; their margin is rather distantly sinuated or toothed; scattered cryptostomes are found on both sides of the midrib. The vesicles are nearly spherical or somewhat longer than broad, up to about ½ cm long and 3–4 mm broad, but many are smaller. The receptacles, male and female on different plants, are small branched panicles without spines.

*India*: Karwar in tranquil bays.

*Geogr. Distrib.* Indian Ocean.

## **Sargassum Wightii** (Grev. mscr.) J. Ag.

*Agardh, J.*, Spec. Alg., vol. I, p. 329; Species Sargass. Austral., p. 86. *Greville, R. K.*, Sargassum, p. 95, tab. X. *Grunow, A.*, Additamenta, p. 382, no. 81.

In a collection of Algæ belonging to the Herbarium of the British Museum some specimens are to be found which seem referable to this species. The specimens are sterile or just beginning to fruit. There is a narrow-leaved and a more broad-leaved form present. The narrow-leaved plant is when dried almost black with thick opaque leaves. These are nearly linear, up to about 5–6 cm long and 2–3 mm broad tapering towards both ends, the apex is acute or obtuse, at the base attenuated, passing evenly over into the short stipe 1–3 mm long. The margin of the leaves is nearly entire or a little sinuate. The midrib is scarcely seen and there are very few cryptostomes on both sides of it. The vesicles are rather large, oblong up to about 7 mm long and 4 mm broad and have a rather long stipe up to

about 7 mm long; it is seldom that they end in a long tip. The receptacles are, as mentioned above, only just beginning to be developed. This specimen most probably belongs to forma SUBLINEARIS Grun., which is known from Ceylon.

The other specimen has broader, thinner and much more brown leaves about 5–6 cm long and 8–9 mm broad; the margin of the leaves is sinuate-dentate. The vesicles are nearly spherical and much smaller, about 5 mm broad. The specimen is sterile. This plant has some likeness to a specimen from Ceylon (*Harvey*, Ceylon Algæ no. 106) found here in the Botanical Museum, but the colour of the Indian plant is much more brown and the vesicles smaller than those of the Ceylon specimen.

*India*: Pamban, *M. O. P. Iyengar*; without locality, *Wight*.

*Geogr. Distrib.* India, Ceylon.

### **Sargassum ilicifolium** (Turn.) C. Ag. var. **venusta** Grun.?

*Grunow*, Additamenta, p. 404, no. 106.

Professor *Setchell* has put a ? after the name and says about the determination: "A specimen which agrees fairly well, but not exactly, with a specimen in our Herbarium determined by *Grunow* and sent out from his collection. The coincidence is not exact, but I presume that these Indian forms are mostly of this variety".

The leaves in the specimens (Plate IV) are about 3½ cm long and 1 cm broad decreasing upwards; the margin of the leaves is sinuate-dentate. Several scattered cryptostomes are found on both sides of the midrib. The vesicles are spherical up to about 3 mm broad, most of them being smaller. The receptacles are fastigiately branched, triangular and spinulose. According to *Greville* they are androgynous, but I found only female ones.

*India*: Karwar. Bengi Bay in a rather exposed locality. At Bombay (Bandra seaface) I gathered a single young female specimen coming closer to the typical form with sharply serrate or dentate leaves.

*Geogr. Distrib.* Indian Ocean, Red Sea.

### **Sargassum myriocystum** J. Ag.

*Agardh, J.*, Spec. Alg., vol. I, p. 314; Species Sargass. Austral., p. 99.

*Grunow, A.*, Additamenta, p. 440, no. 134.

To this species, which according to *J. Agardh* is already known from India, I think a female specimen from the collection of the British Museum can most probably be referred, as it seems to agree rather well with *Grunow's* description.

The stem of the specimen is rather rough with short processes. The leaves are about 2 cm long and ½ cm broad, decreasing upwards and becoming quite small higher up. They are dark, nearly blackish-brown when dried. Their margin is more or less dentate, and their apex more or less rounded.

Scattered cryptostomes are present on both sides of the midrib. The vesicles are small, spherical, 1–2 mm broad. The female receptacles are somewhat spinulose and very much ramified.

*India :* Pamban, *M. O. P. Iyengar*: without locality, *Wight.*

*Geogr. Distrib.* China, Java, India.

## **Sargassum plagiophyllum** (Mert.) J. Ag.

*Agardh, J.*, Spec. Alg, vol. I, p. 309; Species Sargass. Austral., p. 120, Tab. XII. *Grunow, A.*, Additamenta, p. 9, no. 149.

I owe the determination to Professor *Setchell*. I have compared my specimens with a specimen from "Detroit de Malacca" (Baume) in Herb. *J. Agardh*, Lund. This is rather a poor specimen, being only the uppermost part of a plant, with somewhat smaller leaves than those in my plant. My specimens (Plate V) on the other hand agree quite well with *J. Agardh's* figure.

The stipe in my specimens is terete, glabrous, about 1 mm thick (dried). The leaves are linear-oblong, dull, with subundulate or subdentate, often almost quite entire margins with obtuse apex and acute base passing evenly over into the quite short stipe. In the lower parts of the specimens the leaves are about 3 cm long and ¾ cm broad becoming smaller upwards and have scattered cryptosomes on both sides of the midrib. The vesicles are small, spherical, about 2 mm broad, sometimes tipped. The only fruiting specimen is a male plant; the branched receptacles have no spines, whereas the female ones according to *Grunow's* description are provided with spines.

*India*: Karwar in tranquil bays.

*Geogr. Distrib.* Indian Ocean.

## **Turbinaria conoides** Kütz.

*Kützing*, Tab. Phycol., vol. X, p. 24, tab. 66, II e, f. *Barton, E. S.*, A systematic and structural account of the genus Turbinaria, Lamx. in Transact. of the Linnean Society of London, 2nd Ser., Botany, vol. III, part 5, London 1891.

TURBINARIA VULGARIS, var. CONOIDES J. Ag., Spec. Alg., vol. I, p. 267.

In her above-mentioned monograph of the genus TURBINARIA Miss *Barton* quotes as synonym to this species FUCUS TURBINATUS L., (Spec. Plant., vol. II, p. 1160), and bases this statement upon a

specimen found in *Linné's* Herbarium, London. Consequently in my paper on the *Forsskaal* Algæ [1] I pointed out that *Kützing's* specific name for this species ought to be changed into *Linné's*, namely, TURBINARIA TURBINATA (L.). But I later on found that for several reasons this cannot be done, first because *Kuntze*[2] has already used this name for the West Indian species, TURBINARIA TRIALATA, and secondly, because, as Mr. Geoffrey Tandy, British Museum, London, who is much interested in the question, has kindly informed me, there was no specimen of TURBINARIA in Herb. *Linné* before 1767, *Linné's* FUCUS TURBINATUS in "Spec. Plant" (1753) being based only upon the West Indian plant described in *Hans Sloane's* "Natural History of Jamaica," 1707, p. 58, tab. 20, fig. 6.

Accordingly the name of this species must remain as proposed by *Kützing*.

Of this plant we have here in the Botanical Museum an old Indian specimen (var. TYPICA, with vesicles) originating from the former Danish colony, Tranquebar, in South India. Moreover, in a collection of Indian Algæ belonging to the British Museum, London, and sent to me for determination a specimen from Pamban is present; it belongs to var. EVISICULOSA Barton, as the stipe of the leaf is not inflated.

*India*: Tranquebar, *J. P. Rottler*; Pambam, *M. O. P. Iyengar.*

*George Distrib.* Sumatra, Singapore, Ceylon, Java, Celebes, China, Australia.

COPENHAGEN,
*June, 1932.*

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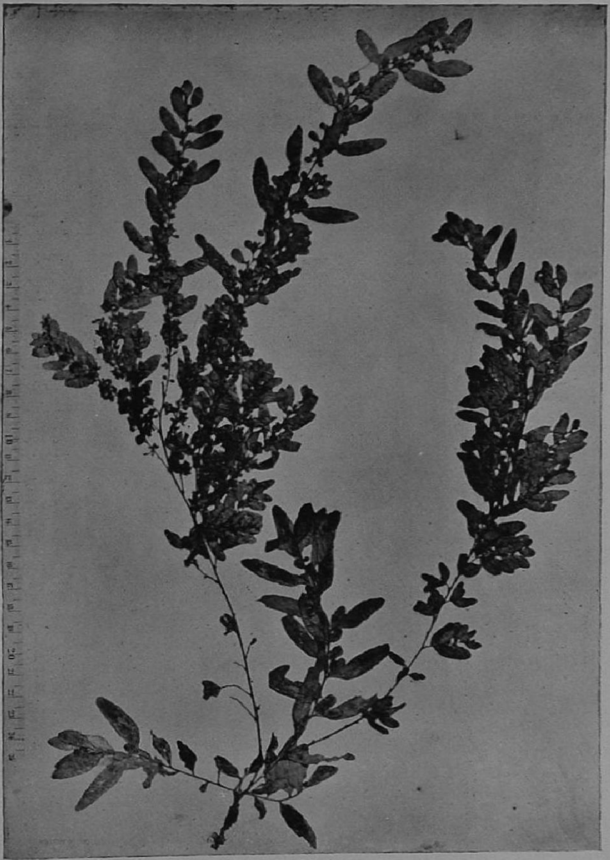
[1] *Boergesen, F.*, *A* revision of *Forsskaal's* Algæ mentioned in Flora Aegyptiaco-arabica and found in his herbarium in the Botanical Museum of the University of Copenhagen (Dansk Bot. Arkiv, vol. 8, 1932, no. 2, p. 12, the note)

[2] *Kuntze, O.*, Revisio generum plantarum, Pars II, p. 434.

**Struvea tuticorinensis** Boergs. sp. nov. A tuft of the plant. × 3.

Sargassum tenerrimum J. Ag.



Sargassum cinereum J. Ag. var. berberifolia Grun.

**Sargassum ilicifolium** (Turn.) C. Ag. var. **venusta** Grun. ?

**Sargassum plagiophyllum** (Mert.) J. Ag.